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Applicant:

B. Herman

Attorney Docket No.: WEYE121341/24873

Application No.: 10/727,446

Art Unit: 3643 / Confirmation No.: 7090

Filed:

December 3, 2003

Examiner: Jeffrey L. Gellner

Title:

USE OF A LOW NITROGEN FERTILIZER TO PROPAGATE SHOOTS FROM A LOG

TRANSMITTAL OF APPEAL BRIEF

December 18, 2006

TO THE COMMISSIONER FOR PATENTS:

A. Appeal Brief

Enclosed herewith for filing in the above-identified application is an Appeal Brief. The required fee of \$500 is included in our enclosed check.

B. Fee Enclosed

Enclosed is our Check No. 173435 in the amount of \$500 to cover the requisite fee.

C. Additional Fee Charges or Credit for Overpayment

The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Deposit Account No. 03-1740. A copy of this document is enclosed.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first-class mail with postage thereon fully prepaid and addressed to Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22343-1450, on the below date.



BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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B. Herman

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APPELLANT'S APPEAL BRIEF

Seattle, Washington

December 18, 2006

TO THE COMMISSIONER FOR PATENTS:

This brief is in support of a Notice of Appeal filed in the above-identified application on May 16, 2006, to the Board of Patent Appeals and Interferences appealing the decision dated February 6, 2006. A Pre-Appeal Brief conference was held in connection with this matter, and a Notice of Panel Decision from Pre-Appeal Brief Review was mailed on November 21, 2006, indicating the Panel's decision that the application remains under appeal because there is at least one actual issue for appeal.

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I. REAL PARTY IN INTEREST

Weyerhaeuser Company, a Washington corporation, having a place of business at 33663 Weyerhaeuser Way South, Federal Way, Washington 98003, is the assignee of the entire interest of the appealed subject matter.

II. RELATED APPEALS AND INTERFERENCES

There are no known related appeals, interferences or judicial proceedings.

III. STATUS OF CLAIMS

Claims 1-16 are pending in the application. All claims stand rejected under 35 U.S.C. § 103(a). The Applicant now appeals the rejection of Claims 1-16. The table below indicates their status.

Claim(s)	Status	Appealed
1	Original	Yes
2	Original	Yes
3	Original	Yes
4	Original	Yes
5	Original	Yes
6	Original	Yes
7	Original	Yes
8	Original	Yes
9	Original	Yes
10	Original	Yes
11	Original	Yes
12	Original	Yes
13	Original	Yes
14	Original	Yes
15	Original	Yes
16	Original	Yes

IV. <u>STATUS OF AMENDMENTS</u>

The application was finally rejected in a paper dated February 6, 2006. No claim amendments have been entered. A copy of the appealed claims as originally filed is attached in the Claims Appendix.

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V. <u>SUMMARY OF CLAIMED SUBJECT MATTER</u>

There is one independent claim on appeal, Claim 1. Claim 1 is directed to a method for promoting the growth of shoots from a log. The method includes the step of applying a fertilizer solution that comprises less than about 0.01% (w/v) nitrogen, to a member of the group consisting of an Alder log, a Beech log, and a Birch log, in an amount sufficient to promote the growth of shoots from the log. Logs are described in the specification as typically between twelve inches and twenty-four inches long, with a diameter typically between one inch and two inches. Specification at page 3, lines 9-11. The term "shoot" is defined in the specification as tissue that grows from any portion of an Alder log, Beech log or Birch log that has meristematic activity. Specification at page 2, lines 25-28. The term "shoot" includes, for example, tissue that grows from a bud or lenticel on an Alder, Beech or Birch log. Specification at page 2, lines 26-28. The shoots may have the appearance of small branches and may form leaves. The shoots can be induced to form roots by excising the shoot from the log, applying a rooting hormone to the cut surface of the shoot, and thereafter cultivating the shoot in a growth medium under environmental conditions that promote root formation. Specification at page 2, lines 25-31.

Claims 2-16 depend from Claim 1. Claim 2 recites that the fertilizer solution does not contain any nitrogen. Claim 3 recites the application of the fertilizer solution as a mist. Claims 4-5 recite continuous application and intermittent application, respectively, of the fertilizer to the log. Claim 6 recites the application of the fertilizer as a mist at a minimum pressure of 65 psi. Claim 7 specifies that the fertilizer solution comprises potassium and phosphorus. Claim 8 specifies that the fertilizer solution comprises potassium, phosphorus and copper. Claim 9 specifies that the fertilizer solution comprises a vitamin. Claim 10 recites that the method of Claim 1 further comprises harvesting at least some of the shoots from the log,

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planting the harvested shoots in a rooting medium in the presence of a rooting hormone, and applying a fertilizer solution, that comprises less than about 0.01% (w/v) nitrogen, to the planted shoots in an amount effective to promote growth of the shoots. Claims 11-12 further define the rooting medium of Claim 10 as comprising perlite or vermiculite, respectively. Claims 13-16 recite that the log of Claim 1 is an Alder log, Beech log, or a Birch log, respectively.

By way of background, there is a demand for Alder, Beech and Birch trees that possess desirable characteristics, such as an accelerated growth rate, or desirable wood characteristics. See Specification at page 1, lines 9-11. One approach to propagating Alder, Beech and Birch trees that possess desirable characteristics is to clone these trees. The present invention provides methods that promote the growth of shoots from a log obtained from a parent Alder, Beech or Birch tree. Specification at page 1, lines 17-19. As a result of practicing the method of the present invention, numerous shoots can be propagated from a single parent Alder, Beech or Birch tree. These shoots can then be cultivated to produce Alder, Beech or Birch trees that are genetically identical to the parent tree. Specification at page 1, lines 12-19.

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

First Ground of Rejection - Claims 1-6 and 10-16

Claims 1-6 and 10-16 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Radwan, et al., *New Forests 3*:21-30 (1989) in view of Saul, et al., *Forest Research Note No. 33* (1982).

Second Ground of Rejection - Claims 7-9

Claims 7-9 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Radwan, et al., *New Forests 3*:21-30 (1989) in view of Saul, et al., *Forest Research Note No. 33* (1982), in further view of Huss-Danell, *Physiol. Plant 49*(2):113-116 (1980).

VII. ARGUMENT

First Ground of Rejection - Claims 1-6 and 10-16

Claims 1-6 and 10-16 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Radwan, et al., *New Forests* 3:21-30 (1989) in view of Saul, et al., *Forest Research Note No.* 33 (1982). The Examiner sets forth the position that Radwan, et al. discloses "a method for promoting growth of shoots ("vigorous new shoots" of top page 23) comprising applying fertilizer solution ("intermittent overhead mist" of 2nd paragraph of page 24) that comprises less than about 0.01% (w/v) nitrogen (in that the mist is water which would contain less than about 0.01% (w/v) nitrogen) from an Alder." (Office Action dated September 9, 2005, page 2.) The Examiner acknowledges that Radwan, et al. does not disclose the use of an alder log (Office Action dated September 9, 2005, page 2). The Examiner cites Saul, et al. as disclosing the use of a log ("cuttings" of Saul, et al.) as a source for propagation. The Examiner then concludes that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Radwan, et al. by using a log as disclosed by Saul, et al. so as to have a practical way of propagating cuttings of Alder so as to increase the developmental speed of improved genotypes (Office Action dated September 9, 2005, page 2.) Applicant respectfully disagrees with the Examiner's conclusions for the following reasons.

Applicant submits that the Examiner has failed to establish a *prima facie* case of obviousness because: (1) there is no teaching or suggestion in the cited references to modify the teachings to arrive at the invention as claimed; (2) there is no expectation of success because the cited references teach away from the claimed invention; and (3) even if combined, the cited references in combination fail to teach or suggest all the claim limitations.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in knowledge

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generally available to one of ordinary skill in the art, to modify the reference or to combine the referenced teachings in the manner claimed. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Both the teaching or suggestion to make the claimed combination and the reasonable expectation of success "must be found in the prior art, and not based on the applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); *Manual of Patent Examining Procedure* (M.P.E.P.) Sections 706.02(j), 2142 and 2143. As stated in *In re Fritch*, 972, F.2d 1260, 1266, 23 U.S.P.Q.2d 1780, 1784, (Fed Cir 1992), it is impermissible to use the claimed invention as an instruction manual or "template" in attempting to piece together isolated disclosures of the prior art so that the claimed invention is rendered obvious.

Moreover, Section 103 specifically requires consideration of the claimed invention as a whole. As pointed out recently by the Federal Circuit,

[i]nventions typically are new combinations of existing principles or features. . . the 'as a whole' instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A+B+C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. Section 103 precludes this hindsight discounting of the value of new combinations by requiring assessment of the invention as a whole.

Ruiz v. A.B. Chance Company, 357 F.3d 1270, 69 U.S.P.Q.2d 1686, 1690 (Fed. Cir. 2004).

As an initial matter, Applicant wishes to point out that the claimed invention is a method of promoting *shoots* from a *log*, comprising the step of applying a fertilizer solution that comprises less than about 0.01% (w/v) nitrogen, to a member of the group consisting of an Alder

log, a Beech log and a Birch log, in an amount sufficient to promote the growth of shoots from the log. Applicant submits that none of the cited references, either alone or in combination, teach or suggest a method of promoting shoots from a log, comprising the step of the application of fertilizer solution containing less than 0.01% nitrogen (w/v) to a log, as recited in Claim 1.

The Cited References Fail to Teach or Suggest Propagation of Shoots From a Log

The Examiner initially set forth the position that Radwan, et al. discloses "a method for promoting growth of shoots ("vigorous new shoots" of top page 23) comprising applying fertilizer solution ("intermittent overhead mist" of 2nd paragraph of page 24) that comprises less than about 0.01% (w/v) nitrogen (in that the mist is water which would contain less than about 0.01% (w/v) nitrogen) from an Alder." (Office Action dated September 9, 2005, page 2.) The Examiner initially acknowledged that Radwan, et al. does not disclose the use of an Alder log (Office Action dated September 9, 2005, page 2, and Office Action dated February 6, 2006, page 2). However, the Examiner has recently mischaracterized Radwan, et al. as disclosing logs, as stated in the Advisory Action mailed on April 13, 2006. "Radwan, et al. discloses a tree that is fertilized and girdled to produce sprouts (*logs* of claim 1)." (Advisory Action mailed on 4/13/06, page 2, emphasis added.)

Applicant disagrees with the Examiner's characterization of the Radwan, et al. reference as stated in the Advisory Action. Radwan, et al. describes propagation of shoots from a *living tree* and does not teach or suggest the propagation of *shoots* from a *log*. As previously pointed out by Applicant, the term "log" refers to a piece of cut timber. Thus, for example, in the context of trees, the definition of the noun "log" provided by the *American Heritage College Dictionary* (3d ed.) is "a. A large section of a trunk or limb of a fallen or felled tree. b. A long thick section of trimmed unhewn timber." (See Applicant's Response to Office Action, mailed June 17, 2005.)

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The term "log" is used in the instant specification in a manner that is consistent with its ordinary meaning as a cut piece of timber. For example, it is clear in the present specification that logs are cut from trees and are between 12 and 24 inches in length, with a diameter between 1 and 2 inches, and include a bud or lenticel from which a shoot may grow (specification at page 2, lines 25-29). "Alder, Beech or Birch logs are preferably cut from the lower, healthy branches of an Alder, Beech or Birch tree, although logs from upper branches may also be used. Page 3, lines 12-13.

The Examiner cites Saul, et al. as disclosing the use of a log ("cuttings" of Saul, et al.) as a source for propagation. The Examiner then concludes that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Radwan, et al. by using a log as disclosed by Saul, et al. It is respectfully submitted that the deficiencies of Radwan, et al. are not cured by the teachings of Saul, et al. Saul, et al. does not teach or suggest a method of promoting the growth of *shoots* from a *log* as claimed in Claim 1. Rather, Saul, et al. discloses the vegetative propagation of Alder by use of *rooted cuttings*. (See, *e.g.*, Saul, et al., pages 1-2.) Saul, et al. discloses obtaining cuttings from lignified or green stems, dipping them into rooting powder and planting them vertically into a rooting media to obtain roots. The study described in Saul, et al. examined the conditions for the best rooting, and determined that the cuttings rooted in all mixtures tested, and that the majority of the roots developed from the callus at the bottom of the cuttings (Saul, et al., page 2).

It is clear that the rooting methods described in Saul, et al. are distinct from the method of promoting the growth of shoots from a log in present invention. As described in the specification, the term "shoot" is distinguished from roots, for example "shoots can be induced to form roots by excising the shoots from the log, applying a rooting hormone to the cut surface of the shoot, and thereafter cultivating the shoot in a growth medium under environmental

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conditions that promote root formation." See specification at page 2, lines 25-31. As further described in the specification at page 8, line 22, "[s]hoots grow from meristematic tissue, such as lenticels, on the logs." "When the shoots are 3 to 4 centimeters tall they are cut off the log... and a productive log will yield more than 50 cuttings." Page 8, lines 22-26.

Moreover, even if one were to take the view that the cuttings of Saul, et al. teach the use of "logs," there is no expectation of success inferred from either Radwan, et al. or Saul, et al. that would lead one to believe the method of Radwan, et al. would produce *shoots* from cuttings. As described above, the method of Radwan, et al. is performed on living trees in contrast to logs (cut timber). Applicant further wishes to point out that there is no teaching or suggestion in Radwan, et al. that would lead to an expectation of success for obtaining shoots from a log as claimed. Rather, Radwan, et al. actually teaches away from the claimed method by describing the need for the application of a fertilizer containing greater than 0.01% nitrogen, and pruning and/or girdling young living *trees* to produce shoots, which "appeared along the bole in the vicinity of the girdles." Page 25.

The Cited References Fail to Teach or Suggest the Application of a Fertilizer Solution

Containing Less Than 0.01% Nitrogen (w/v) to a Log

Claim 1 recites the step of applying a fertilizer solution, that comprises less than about 0.01% (w/v) nitrogen, to a member of the group consisting of an Alder log, a Beech log and a Birch log, in an amount sufficient to promote the growth of shoots from the log. It is submitted that none of the cited references describe or suggest the use of a fertilizer solution comprising less than 0.01% nitrogen to promote the growth of shoots from a log, as claimed.

The Examiner initially characterized Radwan, et al. as disclosing a method for promoting growth of shoots comprising applying *fertilizer* solution ("intermittent overhead mist" of 2nd paragraph of page 24) that comprises less than about 0.01% (w/v) nitrogen (in that *mist is water*

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which would contain less than about 0.01% (w/v) nitrogen) from an Alder. See Office Action mailed September 9, 2005, page 2. However, in the Office Action mailed on February 6, 2006, the Examiner acknowledged that Radwan, et al. does not disclose the application of fertilizer solution to logs and explicitly stated that he "considers the mist of Radwan, et al. to contain no nitrogen exactly because the reference is silent as to any fertilizer in the mist." Office Action mailed February 6, 2006, page 5, emphasis added. The Examiner has repeated this characterization of Radwan, et al. in the Advisory Action mailed April 13, 2006, stating "[w]ith the cuttings, Radwan, et al. mists with no fertilizer added." Advisory Action mailed April 13, 2006, page 2, emphasis added. Therefore, as acknowledged by the Examiner, Radwan, et al. does not disclose the step of applying a fertilizer solution to a log, as required by Claim 1.

Applicant wishes to point out that the term "fertilizer" is used in the specification consistent with the ordinary meaning of the term. For example, as described in the specification: "[t]he present inventors have observed that fertilizers that include substantial amounts of nitrogen are detrimental to the growth of shoots on Alder, Beech and Birch logs. Consequently, in the practice of the present invention, Alder, Beech or Birch logs are *nourished with a fertilizer* that includes no more than about 0.01% (w/v) nitrogen. Some fertilizers useful in the practice of the present invention do not include any nitrogen. Fertilizers useful in the practice of the present invention typically also include potassium and phosphorus and may optionally contain copper which is both a nutrient and an anti-fungal agent." Specification at page 3, lines 21 to 29. See also specification at page 3, line 30, to page 4, line 24.

In fact, as described above, Radwan, et al. actually teaches away from the claimed invention in this regard. Radwan, et al. discloses a method of producing shoots from living trees with application of a fertilizer containing greater than 0.01% nitrogen, and pruning and/or girdling young living *trees* to produce shoots. "[E]ach tree was *fertilized with 2 kg of a 10-20-20*

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commercial fertilizer. The mature trees were girdled around half the circumference at several points along the bole to encourage formation of epicormic sprouts, and the younger trees were pruned to stimulate production of vigorous shoots." (Radwan, top of page 23, emphasis added).

In summary, Applicant respectfully submits that neither Radwan, et al. nor Saul, et al. teaches, suggests, or provides any motivation to make or otherwise render obvious the claimed invention because: (1) there is no teaching or suggestion in the cited references to modify the teachings to arrive at the invention as claimed; (2) there is no expectation of success because the cited references teach away from the claimed invention; and (3) even if combined, the cited references in combination fail to teach or suggest propagation of shoots from a log, or the application of a fertilizer solution containing less than 0.01% nitrogen to a log. Accordingly, Applicant submits that the obviousness rejection of Claim 1 should be reversed. Because Applicant submits that Claim 1 is allowable, dependent Claims 2-6 and 10-16 are also allowable at least because they are dependent upon an allowable claim.

Second Ground of Rejection - Claims 7-9

Claims 7-9 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Radwan, et al., New Forests 3:21-30 (1989) in view of Saul, et al., Forest Research Note No. 33 (1982), in further view of Huss-Danell, Physiol Plant 49(2):113-116 (1980). The Examiner rejected Claim 1 based on the teachings of Radwan, et al. in view of Saul, et al. for the reasons described above. The Examiner acknowledges that neither Radwan, et al. nor Saul, et al. disclose a fertilizer solution for Alder comprising K, P, and Cu. The Examiner cites Huss-Danell as disclosing a rooting fertilizer for Alder with K, P, and Cu (page 114, 1st paragraph). The Examiner then concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the method of Radwan, et al. as modified by Saul, et al. by using the fertilizer solution of Huss-Danell so that the shoots would have adequate nutrition to

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ensure healthy growth. Applicant disagrees with the Examiner's conclusion for the following reasons.

Claims 7-9 depend from Claim 1. Therefore, it is submitted that Claims 7-9 are

patentable over Radwan, et al. and Saul, et al. for at least the reasons set forth above in

connection with the Examiner's rejection of Claims 1-6 and 10-16. The deficiencies of Radwan,

et al. and Saul, et al. are not cured by the teachings of Huss-Danell, which discloses conditions

for promoting rooting of cuttings. Huss-Danell fails to teach or suggest the use of a fertilizer

solution comprising less than about 0.01% (w/v) nitrogen, and comprising K, P, and/or Cu, to

promote the growth of shoots from a log, as required by Claims 7-9.

Consequently, it is submitted that the subject matter of Claims 7-9 is not obvious in view

of the teachings of Radwan, et al., Saul, et al. and Huss-Danell. Accordingly, Applicant

respectfully requests reversal of this ground of rejection.

CONCLUSION

For the foregoing reasons, Applicant respectfully submits that the Claims 1-16 are in

condition for allowance. Accordingly, Applicant requests reversal of the rejections of

Claims 1-16 under 35 U.S.C. § 103(a).

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VIII. CLAIMS APPENDIX

- 1. A method for promoting the growth of shoots from a log, the method comprising the step of applying a fertilizer solution, that comprises less than about 0.01% (w/v) nitrogen, to a member of the group consisting of an Alder log, a Beech log and a Birch log, in an amount sufficient to promote the growth of shoots from the log.
- 2. The method of Claim 1 wherein the fertilizer solution does not contain any nitrogen.
- 3. The method of Claim 1 wherein the fertilizer solution is applied as a mist.
- 4. The method of Claim 1 wherein the fertilizer solution is continuously applied to the log.
- 5. The method of Claim 1 wherein the fertilizer solution is intermittently applied to the log.
- 6. The method of Claim 3, wherein the fertilizer solution is applied at a minimum pressure of 65 psi.
- 7. The method of Claim 1, wherein the fertilizer solution comprises potassium and phosphorus.
- 8. The method of Claim 7, wherein the fertilizer solution comprises copper.
- 9. The method of Claim 1, wherein the fertilizer solution comprises a vitamin.
- 10. The method of Claim 1 further comprising the steps of harvesting at least some of the shoots from the log, planting the harvested shoots in a rooting medium in the presence of a rooting hormone, and applying a fertilizer solution, that comprises less than about 0.01% (w/v) nitrogen, to the planted shoots in an amount effective to promote growth of the shoots.

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- 11. The method of Claim 10 wherein the rooting medium comprises perlite.
- 12. The method of Claim 11 wherein the rooting medium further comprises vermiculite.
 - 13. The method of Claim 1, wherein the log is an Alder log.
- 14. The method of Claim 13, wherein the Alder log is obtained from an Alder tree that is between about 5 years old and about 9 years old.
 - 15. The method of Claim 1, wherein the log is a Beech log.
 - 16. The method of Claim 1, wherein the log is a Birch log.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None

Respectfully submitted, CHRISTENSEN O'CONNOR JOHNSON KINDNESSPLLC

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